

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: June 6, 2001, 23:27:42 ; Search time 39.77 Seconds
(without alignments)
1088.071 Million cell updates/sec

Title: US-09-494-297-2
Perfect score: 3945
Sequence: 1 MKTRFPNKLTNTQRLVLS.....IAGISLGIMGHTIRIKHD 757

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 390729 seqs, 57163235 residues
Total number of hits satisfying chosen parameters: 390729

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

A.Geneseq.0401:*

- 1: /cgnl_8/gcgdata/geneseq/geneseqp/AA1980.DAT:*
- 2: /cgnl_8/gcgdata/geneseq/geneseqp/AA1981.DAT:*
- 3: /cgnl_8/gcgdata/geneseq/geneseqp/AA1982.DAT:*
- 4: /cgnl_8/gcgdata/geneseq/geneseqp/AA1983.DAT:*
- 5: /cgnl_8/gcgdata/geneseq/geneseqp/AA1984.DAT:*
- 6: /cgnl_8/gcgdata/geneseq/geneseqp/AA1985.DAT:*
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- 8: /cgnl_8/gcgdata/geneseq/geneseqp/AA1987.DAT:*
- 9: /cgnl_8/gcgdata/geneseq/geneseqp/AA1988.DAT:*
- 10: /cgnl_8/gcgdata/geneseq/geneseqp/AA1989.DAT:*
- 11: /cgnl_8/gcgdata/geneseq/geneseqp/AA1990.DAT:*
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- 13: /cgnl_8/gcgdata/geneseq/geneseqp/AA1992.DAT:*
- 14: /cgnl_8/gcgdata/geneseq/geneseqp/AA1993.DAT:*
- 15: /cgnl_8/gcgdata/geneseq/geneseqp/AA1994.DAT:*
- 16: /cgnl_8/gcgdata/geneseq/geneseqp/AA1995.DAT:*
- 17: /cgnl_8/gcgdata/geneseq/geneseqp/AA1996.DAT:*
- 18: /cgnl_8/gcgdata/geneseq/geneseqp/AA1997.DAT:*
- 19: /cgnl_8/gcgdata/geneseq/geneseqp/AA1998.DAT:*
- 20: /cgnl_8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
- 21: /cgnl_8/gcgdata/geneseq/geneseqp/AA2000.DAT:*
- 22: /cgnl_8/gcgdata/geneseq/geneseqp/AA2001.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	181	4.6	905	20	W89421
2	180	4.6	597	21	Y90257
3	178	4.5	898	20	W89413
4	161	4.1	1416	20	Y00211
5	161	4.1	1448	20	Y00210
6	154	3.9	1849	18	W17900
7	152	3.9	1849	19	W56573
8	152	3.9	2516	18	W17899
9	152	3.9	2516	19	W56572
10	149	3.8	1315	20	Y08642
11	149	3.8	2032	20	Y00238

12	149	3.8	2032	20	Y00240	Enterococcus faeca
13	149	3.8	2032	13	Y00242	Enterococcus faeca
14	146	3.7	1185	13	R22675	Collagen binding p
15	145	3.7	1112	20	Y08603	S. pyogenes SFBP-
16	144.5	3.7	1092	19	W41602	Staphylococcus epi
17	142.5	3.6	627	19	W62451	Mycoplasma hyopneu
18	142	3.6	991	21	Y83171	Cell wall protein
19	142	3.6	991	21	Y70120	Staph. epidermidis
20	139	3.5	1231	20	Y00219	Enterococcus faeca
21	139	3.5	1265	20	Y00218	Enterococcus faeca
22	139	3.5	2366	17	R95011	C. difficile toxin
23	139	3.5	2366	19	W68388	Clostridium diffic
24	138	3.5	894	20	W89417	Moraxella catarrha
25	137.5	3.5	2522	20	Y33729	Photobhabdus lunin
26	136	3.4	617	21	G30569	Arabidopsis thalia
27	136	3.4	641	21	G30568	Arabidopsis thalia
28	136	3.4	645	21	G30567	Arabidopsis thalia
29	136	3.4	1752	21	G50492	Arabidopsis thalia
30	135	3.4	1228	17	R77673	S-layer protein en
31	135	3.4	1228	18	W22862	Bacillus steatoche
32	135	3.4	1228	20	W93252	B. steatothermophi
33	135	3.4	1228	21	B10625	B. steatothermophi
34	134.5	3.4	2120	21	Y81710	Streptococcus pneu
35	131.5	3.3	921	18	W22863	Bacillus steatoche
36	131.5	3.3	921	21	B10626	B. steatothermophi
37	131	3.3	1116	12	R12083	HMP protein. Baci
38	130.5	3.3	887	21	Y81626	Streptococcus pneu
39	130	3.3	597	18	W20536	H. pylori chaperon
40	130	3.3	638	18	W21012	Bacterial amylase
41	129.5	3.3	1684	12	R14948	Enterococcus pneu
42	128	3.2	621	20	Y00243	Streptococcus pneu
43	128	3.2	666	21	Y81627	Adhesion and penet
44	128	3.2	1394	17	R92768	Pol fragment 2 enc
45	127	3.2	795	21	B03138	

ALIGNMENTS

RESULT 1	
ID W89421	W89421 standard; Protein; 905 AA.
XX	
AC W89421;	
XX	
DT 21-JUN-1999	(first entry)
XX	
DE Moraxella catarrhalis VH19	lactoferrin binding protein 2 (Lbp2).
XX	
KW Lactoferrin receptor; lactoferrin binding protein; Lbp2;	
KW lbp2 gene; infection; otitis media; sinusitis; conjunctivitis;	
KW pneumonia; bronchitis; tracheitis; emphysema; diagnosis; therapy;	
KW vaccine; Branhamella catarrhalis.	
XX	
OS Moraxella catarrhalis.	
XX	
FH	
FT Key	Location/Qualifiers
FT	Misc-difference 282
FT	/note= "encoded by GAC"
FT	Misc-difference 283
FT	/note= "encoded by TAA"
FT	Misc-difference 284
FT	/note= "encoded by GAC"
FT	Misc-difference 285
FT	/note= "encoded by GGC"
FT	Misc-difference 286
FT	/note= "encoded by AAT"
FT	Misc-difference 287
FT	/note= "encoded by TGG"
FT	Misc-difference 288
FT	/note= "encoded by TTG"
FT	Misc-difference 290
FT	/note= "encoded by CTG"

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FT Misc-difference 291 /note= "encoded by ACC"
FT Misc-difference 292 /note= "encoded by GAT"
FT Misc-difference 293 /note= "encoded by GAT"
FT Misc-difference 294 /note= "encoded by GTC"
FT Misc-difference 295 /note= "encoded by AAA"
FT Misc-difference 296 /note= "encoded by CCG"
FT Misc-difference 297 /note= "encoded by CCA"
FT Misc-difference 298 /note= "encoded by TTT"
FT Misc-difference 299 /note= "encoded by GAT"
FT Region 435..441 /note= "conserved epitope"
FT W09855606-A2.
XX 10-DEC-1998.
XX 02-JUN-1998; 98WO-CA00544.
XX 08-MAY-1998; 98US-0074658.
XX 03-JUN-1997; 97US-0867941.
XX (CONN-) CONNAGHT LAB LTD.
XX Du R, Klein MH, Loosmore SM, Wang Q, Yang Y;
XX MPI: 1999-070266/06.
XX N-PSDB: V82021.
XX
XX Lactoferrin receptor genes from Moraxella, especially M. catarrhalis
XX - useful to diagnose Moraxella infection e.g. to detect otitis media
XX due to M. catarrhalis infection and to immunise against such
XX infections
XX
XX Claim 8: Fig 16; 202pp; English.
XX
XX This protein comprises lactoferrin binding protein 2 (Lbp2) of
XX of Moraxella catarrhalis (Branhamella catarrhalis) Vh19. It is
XX encoded by the lbp2 gene of the lactoferrin receptor (lfr) locus
XX (see V72021) identified in the M. catarrhalis Vh19 genome.
XX Immunogenic compositions, including vaccines, based upon expressed
XX recombinant lbp1 and/or lbp2 and/or ORF3 proteins (see W89413-21),
XX portions of these, or their analogues, can be prepared for
XX prevention of diseases caused by Moraxella. M. catarrhalis is a
XX causative agent of otitis media and has been associated with
XX sinusitis, conjunctivitis and inflammatory diseases of the lower
XX respiratory tract, such as pneumonia, chronic bronchitis,
XX tracheitis and emphysema.
XX
XX Sequence 905 AA:
SO

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Query Match 4.6%; Score 181; DB 20; Length 905;
Best Local Similarity 20.7%; Pred. No. 9.3e-05;
Matches 165; Conservative 103; Mismatches 262; Indels 266; Gaps 39;

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OY 84 YKQFVADLKNVDEGSSYOYCFNLKKA-----FPIGSDSVYK-----WYKHHDI 133
DB 165 ytdkfpkisd1-hlense---hvfdaakamkikygyalspaknptymyngqeqn1 218
OY 134 STR--FEDYA-----MSPRIT-----GDELNOKLRAVYNG-----HPQANGIMEGL 174
DB 219 kkkkgdddygnirfygmrelidlnkkgadtdgskrralfitftplfyngenashtlp-- 276
OY 175 EPLNAIRVTOEAVWYSDNAPISNPDE-----SPKRESENLYSTQSLSL----- 219
DB 277 ---kagkftcdkvgtyfnstrksnegktdckvgtyfnstrksnegdlvsaahtynsfk 333

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OY 220 -----MRQALKQLIDPNLATKMPKQVPDDF-----QLSIFESEDK-- 254
DB 334 ykhtpatsvtdidntlgklsydnpnkqtadgryttsqfcdtkkveadyetdakin 393
OY 255 GKYNKGYONLISGL-----VPTKPPYGGDPPMPNPQPTTSVLIRKAIADYSKL 306
DB 394 gnrtfgtksliddntntapfkelfskkpnnp--dnp-----sdt 434
OY 307 LEGATLQTLGDNVNSFOARVFSNDI-----GERIESDGTFTLTENSPAGSIAP 359
DB 435 leggfysesgd-----agkflsmdnatfvfgkrdrktepvaktyfs-tgle--kp 487
OY 360 IFFKYEAGKVYTIIDGK-----QIENPNKEIVPYSVEAYNDF-----EEFSVLTT 405
DB 488 stsfgvneeglsldgkrlndevnngidetvrsnkkeyeyngyrpkqfklklnasvq 547
OY 406 QNYA-----KRY-----AK--NKGSSQVYCFNADLKSPPDSDDGKTTPDFT 449
DB 548 knpayfgqhdkfyngnydlsakeanklgyvsqdslnksllakypda---kvsdtkv 603
OY 450 T-----GEVKYTHIAGRDLFKYTVKPRDTPDPTFK----- 480
DB 604 tkivlqgakdkpytalhaksydhisfgevlyndknpntrsyfvggqgadvsqqlpsagk 663
OY 481 -----HIKKVIEKGYREKGAIEVSGLTETQLRAATQAIYFT----- 519
DB 664 ftynglwagyltqkdkyskdedtlkgkld-----yltkdfipgddddd 712
OY 520 DSAELDKDKLKD-YHFGDMNDSTLAVAKILVEYVADSNPDLTDLDFIPNNKQOSLI 578
DB 713 dslasdsqddntnngdddl-----lasdsqdddtgdddsddl--gdgaddaa 761
OY 579 GOWHPEDLVDIRMEDKKEVIVP---THNLTL-----RKTYWGLAGDRT 620
DB 762 gkyvynagn---irpefenkylpneptnektfaldgkrtakfdvndfnstlgtkinder 817
OY 621 KDFHEIELKNNKQELLISQVTRTDKTNLEFKDKGKATINLKHESITLLOGLPGYSYLVE 680
DB 818 gdlvldl--knkldgtgtfaktadvpnryeeyg-----nnggs-----gflynkld 861
OY 681 TDESGYKVKVNSOEVA 696
DB 862 idvkgqfigtnggeia 877

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RESULT 2

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ID Y90257 standard; Protein: 597 AA.
XX Y90257:
AC Y90257:
XX 19-SEP-2000 (first entry)
DT 19-SEP-2000 (first entry)
DE Streptococcus equi fibronectin binding protein, FN2.
XX Fibronectin binding protein; SFS; vaccine; horse; strangles; therapy;
KW equine upper respiratory tract disease; S. equi infection; FN2.
XX Streptococcus equi.
OS Streptococcus equi.
XX WO200037496-A1.
PD 29-JUN-2000.
XX 21-DEC-1999; 99WO-SE02448.
XX 22-DEC-1998; 98SE-0004491.
PA (GUS/) GUS B.
PA (LIND/) LINDMARK H.
PA (JACO/) JACOBSSON K.
PA (FRYK/) FRYKBERG L.

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XX	Gus B, Lindmark H, Jacobsson K, Frydberg L:	
PI	WPI: 2000-442641/38.	
XX	DR N-PSDB; A30874.	
XX	New protein useful for preparation of vaccines for treatment of	
PT	strangles caused by Streptococcus equi infection, is able to bind to	
PR	mammalian fibrinectin -	
XX	Disclousure; Page 17a-17b; 34pp; English.	
PS		
XX	This sequence represents the Streptococcus equi fibrinectin binding	
CC	protein, FN2. The FN2 sequence was used to isolate the S. equi	
CC	fibrinectin binding protein of the invention, designated SFS. SFS binds	
CC	specifically to mammalian fibrinectin or its analogues or fragments. The	
CC	protein, its analogues or fragments may be used for the preparation of a	
CC	vaccine that protects horses against strangles (a world-wide distributed	
CC	and serious disease of the equine upper respiratory tract) caused by	
CC	S. equi infection. The antibody and/or antiserum may also be used for the	
CC	prophylactic or therapeutic treatment of S. equi infection in mammal,	
CC	especially horses. The use of vaccines containing the fibrinectin binding	
CC	protein provides a more effective protection against S. equi infections,	
CC	with fewer side effects.	
XX		
XX	Sequence 597 AA:	
SQ		
	Query Match 4.6%; score 180; DB 21: Length 597;	
	Best Local Similarity 20.8%; Pred. No. 5.7e-05;	
	Matches 149; Conservative 102; Mismatches 265; Indels 202; Gaps 34.	
OY	68 SEYRWYGEYSYVR-GHPYKQFRVAHDLRVNLEGRSRYQVYCNLKAEPFLGSDSSVKKM 126	
DB	32 aeqllygynqdgtrgsypf--lyvsnprkreldeyvvvynfkllklywpdqweslysnf 89	
OY	127 -----YKHHDSITKFEEDYAMSPRTGELNOKLRAVWYNGHPQANGLMEG- 173	
DB	90 ndisrpyndlpnyekkllygdqglkyapdykklidiasalavavinsyprtknsqstsey 149	
OY	174 -LEPLNATLRVQGEAVWYVSDNAPISNPDESFRSEESNVSRQSLSLMOALAKOLIDPL 232	
DB	150 hlnmdsrkrvcqlawlyfsd---sltkyldtggynl-----ndmekkaldfllskqe 200	
OY	233 ATKMKQVPPDDFOLSLFESDEKGDYKNGYONLLSGGVLPYTPKPPGDPMPNPQOTS 292	
DB	201 dskl-ksegsynslidyvggshhmkmdyqnllystllpkprlp----- 245	
OY	293 VLIRRYAIGDYSKILEGATLDTGDNVNSFQARVESNDIGRIELSDGTYTLTEINSPA 352	
DB	246 -----qlvgfs-----ghnpgnlglegsgsgsgqetne--dgkkgll--lgfhg 284	
OY	353 GYSIAE-----PIT-FKVEAGKYVTIIDDKQIENPKKEIYEPYSEVAYNDEEFESVLTQN 407	
DB	285 glsgegrkrdrpqlkgeagapdt-----pdkrnpdl--qgleagn-----splveqn 330	
OY	408 YAKFYANKNKNSOVVYCFNADLSPPDESGGKTMPTDFTTGKYYNHAG-----R 461	
DB	331 ygs-----tegyhgqslle--etednppglllygsgvne--thedrphinglyggglag 383	
OY	462 DLFKTYVPR-----DTDDPTFLHKIKKVIIEKGYREKCAIYESGLTETOLRAATQ 512	
DB	384 esgetlkrpqvtgsgqvyetletdt-----qkmsgsgsggltseentlkpke 429	
OY	513 LAIYFTDSALDKRKLADYHGFQGMNOSTLAVAKIIVEYAADSNRPQOLTDLDFIPNNN 572	
DB	430 vmljggqglletetdtqr--gmsgsggltle-----sedtkkpev----- 467	
OY	573 KYQSLIGQWHPHEDLVLDIIRMEDEKEVIRPVTHNLTKRYTGLADRDYDFHFEILKNN 632	
DB	468 -----mlggq-----gqlldfsen--tqsgmsgsgsdtt-----viedtk 500	
OY	633 KOELLISQVTKDTNLEFRDGKATINLKHGESLTLOGL--PEGYSYLVKEITDSEGYKYKV 690	

Query Match	4.5%	Score 178	DB 20	Length 898
Best Local Similarity	18.6%	Pred. NO. 0.00015		
Matches 171	Conservative 118	Mismatches 305	Indels 324	Gaps 42

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QY 4 TRPNKNTINTORVLSKSKRFTVTLVGVLFMIFALVTSVMGAKTVEGLVESSTPAIN 63
Db 79 tctpndgndlq-----aqkuaaagftvm-----gkirdspn-d 115
QY PDSSSE--YRWY--YESYVRGHP-----YKQPRVADHDLRVNL 98
Db 116 pdysndlvqwgqklyvgiaahrpddgigtgnlrrptlandikplyfnkfpalsdlhds 175
QY 99 EGSRSIOVYFNLLKAPPLGSDSSVK--WYKHDGISTFEEDYAMP-----RIT 147
Db 176 exhr-fopkklntklygygnltftrsknlyinhqgdnknkxpvdpnenirfyldq 234
QY 148 GDELNOK-----LRAVYNGHPQANANGIMEGLEPLN----- 178
Db 235 gselctgmadtprndatipkmpmllfynh--enassqipaagkfnylgnwlylsdvkkrp 292
QY 179 AIRYTOEAWVYSDNAPISNPDESFKRESNMLVSTQSL----- 219
Db 293 alasaddrvvgvlynasgkn-----egdvvsahilylmgfykhpetygvdtln 343
QY 220 -MRQALKQIDPPLATKMPQVDDF-----QLSIFESDK--GDKYKGIQNLISGC 269
Db 344 sltqklsydpnqptagqkyiksgfdctkknvtdyqidakngnrftygtaakslvnen 403
QY 270 L-----VPTKPPRPDPMPNPQPTSVLIRKVAIDGYSKLEGATLQLTGDNVNS 321
Db 404 tetapfkelfskampnp--npu-----scltsggfygesgdel-- 442
QY 322 FOARVFNSSND-----IGERIELSDGTTLTLELNSPAGYIAEPIPRKAGVYTTIDG 375
Db 443 --agkfinsdnasyvfygkrtdkdvaktvtyfsagfe--kfstafvnetlgrlins 498
QY 376 KQLENPKKEIVE---PYSEAYNDF-----EEFSVLTQON-----YAKFTYAK 415
Db 499 kkindavneklidngdlrptdserydefrpgkkaeflkvssstqavpayfgqndktyf-- 556
QY 416 NKGSQVYVCFNADLKSPDSEGGKTMPTDFTTGEV----- 453
Db 557 --ngnyddlaassvdklapdavkangskiekypnatlndngvtaivlgeakdnkpyta 614
QY 454 ----KYTHIA-GRDLF-----KYTVKPRDTPDTFKHKKVI----- 486
Db 615 lraksyqhisfgeltylndangtrftrsyfyvggradtstlprkagkftynglwagylqkk 674
QY 487 EKVYREKGALEISG-----LTERQLRAATQOLAIYFT-----DSMLDKDKAKOVHGF 535
Db 675 dkysnneetlkkkqygdyllded-----flpeddddlasdsqddahgd 722
QY 536 GDMNDSTLAVAKILVEYAQSNRPQTLDTLDFIIPNNKYSOLIGTOMHPEDIVDIIMED 595
Db 723 ddi-----lasdsqddadgdddsddl--gdgaadaaagkyuhagn-----irpef 767
QY 596 KKEIVPV---THNLT-----RKTVTGLADRTKDFHETELKNNKQEL 637
Db 768 enkyrlpnephetkftaldgknkafdvdtlmsltgklndergdvfdl--kngklidgt 825
QY 638 SQYVTKDKTLEKEDKATINLKHGESLTLOGLPESYLVKEDSDGYKVVNSQEVA-- 696
Db 826 gftakadvpyreevg---nngqg-----gflynlkddvkvqgffgtnggeelaq 871
QY 697 -----NATVSKTG 704
Db 872 qlgydkygdgindtaekag 889

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RESULT 4
Y00211
ID Y00211 standard; Protein; 1416 AA.
XX Y00211;
XX 20-APR-1999 (first entry)
DT

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XX DE Enterococcus faecalis antigenic polypeptide fragment EF104.
XX KW Enterococcus faecalis; infection; vaccine; immune response; diagnosis;
XX KW detection; attenuation; antigenic.
XX OS Enterococcus faecalis.
XX PN WO9850554-A2.
XX PD 12-NOV-1998.
XX PF 04-MAY-1998; 98WO-US08959.
XX PR 14-NOV-1997; 97US-0066009.
XX PR 06-MAY-1997; 97US-0044031.
XX PR 16-MAY-1997; 97US-0046655.
XX PA (HUMA-) HUMAN GENOME SCI INC.
XX PI Bailey C, Choi GH, Hromockyj A, Kunsch CA;
XX DR WPI; 1999-070095/06.
XX DR N-PSDB; X20201.
XX PT New isolated Enterococcus faecalis polynucleotides - used to develop
XX PT products for the detection of Enterococcus and for use in vaccines
XX PT for prevention or attenuation of Enterococcus infection
XX PS Claim 9; Page 203; 301pp; English.
XX CC The present sequence represents an antigenic polypeptide fragment
XX CC isolated from Enterococcus faecalis. The present invention describes
XX CC genes, proteins and antigenic polypeptides isolated from E. faecalis.
XX CC The proteins can be used in vaccines for preventing or attenuating an
XX CC infection caused by a member of the Enterococcus genus in an animal.
XX CC They can also be used for detecting Enterococcus antibodies in a sample.
XX CC The nucleotide sequences can be used for detecting Enterococcus nucleic
XX CC acids. Products from the present invention can also be used for
XX CC screening compounds to identify agonists and antagonists of E. faecalis
XX CC protein activity.
XX SQ Sequence 1416 AA;

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Query Match 4.1%; Score 161; DB 20; Length 1416;
Best Local Similarity 21.1%; Pred. No. 0.0059;
Matches 159; Conservative 104; Mismatches 326; Indels 166; Gaps 40;

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QY 39 ALVTSWVGATVGVLES---STPNAINPDSSSEYRWYGVSGHYVGHYKQPRVANDLR 95
Db 484 slstprygnpkakqlyvsgdylepisyvnp--lnetawngndq-----ngayssr 531
QY 96 --VNEGSRSYQVYCFNLKRAF---LGSDDSVKWKYKHDGISTFEEDYAMPRTGCD 149
Db 532 ttvsvmskqekpqlndleikvkhpnlyslratkelyfuk---lgt---dytvtprsdgs 584
QY 150 ELNOKLRAVYNGHPQANANGIMEGLE-----PLNATRVYQEAWAYVYSDNAPISNPDESFK 204
Db 585 vikftprlneqlrlygfnvvpdsipkdxsiyvdtlrlmsaagllprvdtvtlt---nsk 641
QY 205 RESESNLVSTSQLSLMQALQKOLIDPPLATKMPQVDDPOLISFESEDKGDKYKNGYQN 264
Db 642 rgsertlqssknqflvnarndsfdsisvrtkkrpaga--dvlfdlydvsn--dqvdsiypq 697
QY 265 LLSGLVPTKPPRPDPMP--PNQPTTSVLI-----RKVAIGDYSKL--LEGATIQ 313
Db 698 ywdrgyfdkpmtrpnspgytlctfdentnsyctdfgktkryll--eykhangyldvpty 756
QY 314 LTG-----DNVNSFOARVFNSSNDIGERIELSDGTTLTLELNSPAGYIAEPIITTFYVAG 367
Db 757 itgtakepgsnmegasvsgn---ealdllsat-----gaanplknvkt 801

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QY 368 KYVT-IIDGK--QIENPNKRIEVPYSVEAINDFEFSVLTQNYAKFYAKNNKNGSSQV 424
DB 802 YCFNADLSPDSEDDGKGTWPTFTTGE---VKYTHIAGBDLFEKYTVKPRDTPDFFLKH 846
QY 425 YCFNADLSPDSEDDGKGTWPTFTTGE---VKYTHIAGBDLFEKYTVKPRDTPDFFLKH 481
DB 847 Y-----slektngakvlfkdytlntentlienyntvsanaaglytcttdsetlmgmsa 899
QY 482 IKKVI-----EKGYREKGOAIEYSGLTETQLRAAQLAIYFTD---SAEL 524
DB 900 skktvtapltlkfsegdaeglylatatfytlnvedengalaksfelidnvthtatef 959
QY 525 DKDKLDYHGFDM-NDSTLAIVAKILVEFYAODSNRPOLT-----DLDFRIP----- 569
DB 960 tdekqgsfdaimtgdyltlrvtnvpqesvdee--yltgkaiklvkgdnqiklpiakti 1017
QY 570 NNNKYO-----SLIGTQWHEDELVDIIRMEDKK-EVIRPVHNLIRKTYVGLAGDRTKDF 623
DB 1018 dhsrlqvkdsitlyvgdswkpee--nfvsaatdktgqdvpef-----kltvsgqvdnxxagv 1070
QY 624 HFEIELKNNKQELLSDQVKTDKTNLEFKDGKATINLKHGSELTLOGLPEGSYLVKETS 683
DB 1071 ypllydsdeqkeetayvtvkpdgsklevkd--tliy--gdsww-----pe--dnfvsaatdk 1120
QY 684 EGYKV---KYNSEVANATVSKTGITSDETLAFEN 715
DB 1121 tggdvpftekidvgtvn--vdkig---dyeielykn 1150

RESULT 5
Y00210
ID Y00210 standard; Protein: 1448 AA.
XX
XX Y00210;
AC
XX 20-APR-1999 (first entry)
XX
XX Enterococcus faecalis protein EF104.
DE
XX Enterococcus faecalis; infection; vaccine; immune response; diagnosis;
KM detection; attenuation; antigenic.
XX
XX Enterococcus faecalis.
OS
XX
XX W09850554-A2.
PN
XX
XX 12-NOV-1998.
PD
XX
XX
XX 04-MAY-1998; 98W0-US08959.
PF
XX
XX 14-NOV-1997; 97US-0066009.
PR 06-MAY-1997; 97US-0044031.
PR 16-MAY-1997; 97US-0046655.
XX
XX (HUMA-) HUMAN GENOME SCI INC.
PA
XX
XX Bailey C, Choi GH, Hromockyj A, Kunsch CA;
PI
XX
XX WPI: 1999-070095/06.
DR N-PSDB; X20200.
DR
XX
XX New isolated Enterococcus faecalis polynucleotides - used to develop
PT products for the detection of Enterococcus and for use in vaccines
PT for prevention or attenuation of Enterococcus infection
XX
XX
XX Claim 9; Page 201; 301pp; English.
PS
XX
XX The present sequence represents a protein isolated from
CC Enterococcus faecalis. The present invention describes genes, proteins
CC and antigenic polypeptides isolated from E. faecalis. The proteins can
CC be used in vaccines for preventing or attenuating an infection caused
CC by a member of the Enterococcus genus in an animal. They can also be
CC used for detecting Enterococcus antibodies in a sample. The nucleotide

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CC sequences can be used for detecting Enterococcus nucleic acids.
CC Products from the present invention can also be used for screening
CC compounds to identify agonists and antagonists of E. faecalis protein
CC activity.
XX
SO Sequence 1448 AA:

Query Match 4.1%; Score 161; DB 20; Length 1448;
Best Local Similarity 21.1%; Pred. No. 0.0061;
Matches 159; Conservative 104; Mismatches 326; Indels 166; Gaps 40;

QY 39 ALVTSWAGTATVGLVES---STPNAINPDSSEYRMYGVEYRGHPYKQORVANDLR 95
DB 511 slstpryprkaqlqvsdqylepislvpn--lnaetaagndq-----ngaysr 558
QY 96 --VNEESRSRYOYCFLLKAPF---LGSDSVKKMKYKHDISTFEDYAMSPRTGD 149
DB 559 tlvsvngskkprlgnleikvkhpnylsiratkeilyfk-----lgt---dyvtlpsdgs 611
QY 150 ELNQKLRVAVYNGHPONANGIMEGL-----PLNAIRVTQEAAYWYSDNAPISNPDESFK 204
DB 612 vikftprlneiqrigfnyvpslprkdeiprdlprltnsaegllprvdtvtl---nsk 668
QY 205 RESESNLVSTISQSLMQLKQLIDPMLATKMPKQVDDPQLSFESEDKGDKYNNKGYON 264
DB 669 rgeertqgsknqflvvarndsfdslsvrckipaga--dvlfidydsn--dgvdslypq 724
QY 265 LLSGGLVTRKPTPGDPMP--PNOPTQTSVLI-----RKVAIGDSKU---LEGATIQ 313
DB 725 ywdrgqyfdkprmpnrpnytlitfdentnsytdfgtknkryli--eykhangwldvptly 763
QY 314 LTG-----DNVNSFOARVESNDIGERIELSDQVYTLTELSNPDAGYSIAEPTFKVEAG 367
DB 784 ltgtakeqgsnnnegasavsqn---ealdllsat-----qaanptlkvctk 828
QY 368 KYVT-IIDGK--QIENPNKRIEVPYSVEAINDFEFSVLTQNYAKFYAKNNKNGSSQV 424
DB 829 YCFNADLSPDSEDDGKGTWPTFTTGE---VKYTHIAGBDLFEKYTVKPRDTPDFFLKH 873
QY 425 YCFNADLSPDSEDDGKGTWPTFTTGE---VKYTHIAGBDLFEKYTVKPRDTPDFFLKH 481
DB 874 Y-----slektngakvlfkdytlntentlienyntvsanaaglytcttdsetlmgmsa 926
QY 482 IKKVI-----EKGYREKGOAIEYSGLTETQLRAAQLAIYFTD---SAEL 524
DB 927 skktvtapltlkfsegdaeglylatatfytlnvedengalaksfelidnvthtatef 966
QY 525 DKDKLDYHGFDM-NDSTLAIVAKILVEFYAODSNRPOLT-----DLDFRIP----- 569
DB 987 tdekqgsfdaimtgdyltlrvtnvpqesvdee--yltgkaiklvkgdnqiklpiakti 1044
QY 570 NNNKYO-----SLIGTQWHEDELVDIIRMEDKK-EVIRPVHNLIRKTYVGLAGDRTKDF 623
DB 1045 dhsrlqvkdsitlyvgdswkpee--nfvsaatdktgqdvpef-----kltvsgqvdnxxagv 1097
QY 624 HFEIELKNNKQELLSDQVKTDKTNLEFKDGKATINLKHGSELTLOGLPEGSYLVKETS 683
DB 1098 ypllydsdeqkeetayvtvkpdgsklevkd--tliy--gdsww-----pe--dnfvsaatdk 1147
QY 684 EGYKV---KYNSEVANATVSKTGITSDETLAFEN 715
DB 1148 tggdvpftekidvgtvn--vdkig---dyeielykn 1177

RESULT 6
W17900
ID W17900 standard; Protein: 1849 AA.
XX
XX W17900;
AC
XX 29-JAN-1998 (first entry)
XX

```

XX	Photornhabdus luminescens insect toxin TcdAl.	
KW	Insecticide; insect; toxin; pest control; biological control;	
KW	Photornhabdus luminescens; TcdA; Southern corn rootworm;	
KW	Colorado potato beetle; Western corn rootworm; meal worm;	
KW	boll weevil; turf grub; Coleoptera; beet armyworm; black cutworm;	
KW	cabbage looper; codling moth; corn earworm; European corn borer;	
KW	tobacco hornworm; tobacco budworm; Lepidoptera; Hymenoptera;	
KW	Diptera, Dictyoptera; Acarina; Homoptera.	
OS	Photornhabdus luminescens strain W-14 (ATCC 55397).	
XX		
FH	Key	Location/Qualifiers
FT	Protein	1..1849
FT		/label= TcdAl1
FT	Peptide	1..112
FT	Peptide	/note= "S2 N-terminalus (Claim 30)"
FT	Peptide	196..211
FT	Peptide	/note= "tryptic peptide (Claim 30)"
FT	Peptide	466..475
FT	Peptide	/note= "tryptic peptide (Claim 30)"
FT	Peptide	993..1004
FT	Peptide	/note= "isolated N-terminal peptide (Claim 30)"
FT	Peptide	1297..1312
FT	Peptide	/note= "tryptic peptide (Claim 30)"
FT	Peptide	1390..1409
FT	Peptide	/note= "tryptic peptide (Claim 30)"
FT	Peptide	1532..1554
XX		/note= "claimed peptide (Claim 30)"
XX		
PN	W09717432-A1.	
XX		
PD	15-MAY-1997.	
XX		
PF	06-NOV-1996;	96MO-US18003.
XX		
PR	28-AUG-1996;	96US-0705484.
PR	06-NOV-1995;	95US-0007255.
PR	28-FEB-1996;	96US-0608423.
XX		
PA	(WISC) WISCONSIN ALUMNI RES FOUND.	
XX		
PI	Blackburn MB, Bowen DJ, Cliche TA, Ensign JC, Fatig R;	
PI	French-Constant RH, Guo L, Hey TD, Merlo DJ, Orr GL;	
PI	Petrelli J, Roberts JL, RocheJean TA, Schoonover S;	
PI	Strickland JA;	
DR	WPI; 1997-281022/25.	
DR	N-PSDB; T68844.	
XX		
PT	Photornhabdus sp. insecticidal protein toxins and DNA encoding them -	
PT	can be genetically engineered into insect larvae food and plants for	
PT	insect control	
XX		
PS	Claim 34; Page 201-208; 276pp; English.	
XX		
CC	This polypeptide comprises the 209.2 kDa TcdAl insecticidal toxin	
CC	protein of Photornhabdus luminescens W-14. Its sequence was deduced	
CC	from a genomic DNA clone (T68844) and includes N-terminal and	
CC	tryptic peptide sequences obtained from the isolated protein.	
CC	TcdAl is a proteolytic cleavage product of TcdA (see W17699).	
CC	Claimed toxins of P. luminescens (see W17871, W17884-89, W17699-900,	
CC	W18301-06) can be produced by recombinant DNA methods and applied	
CC	to, or genetically engineered into, insect larvae food and plants	
CC	for insect control. The toxins are particularly effective against	
CC	Southern corn rootworm, Colorado potato beetle, Western corn	
CC	rootworm, meal worm, boll weevil and turf grub (Coleoptera), beet	
CC	armyworm, black cutworm, cabbage looper, codling moth, corn earworm,	
CC	European corn borer, tobacco hornworm and tobacco budworm	
CC	(Lepidoptera), and are also active against insects of the orders	
CC	Hymenoptera, Diptera, Dictyoptera, Acarina and Homoptera. (All	
CC	claimed).	
XX		

Sequence	1849 AA:
Query Match	3.9%, Score 154; DB 18; Length 1849;
Best Local Similarity	18.3%; Pred. No. 0.03;
Matches 148; Conservative 120; Mismatches 287; Indels 254; Gaps	37/
157	AVMNGHPNONGMEGLEPLNAIVTQE-AWVYSD-----NAPISNPDESKRESE 208
Db	796 aqqlnvapqyvaalv-gldyigsmkeltptaywenaagvltqglnsqentlhalidseer 854
Oy	209 SNLVST---SOLSLMRQALKO-----LIDPNLA-----TKMKQVDPDFOL----- 246
Db	855 saalstyyirgakaakaalksrddilyqllldngysaalktrrlaeaala-siglyvnral 913
Oy	247 -SIFSEDEKG-----DKYNGCYONLLSGGLVPIKPPRPGRPPMPNQPQTTSVLI 295
Db	914 enveenansqvlsirgffidwdkynkrystswagvsqlyvyyenyidpctmrigtkmmadal 973
Oy	296 RKYA-----IGDYSKLLEGATLQLTGDNVNSEQARVF-----SSNDIGC 334
Db	974 qvsgsqlnativedafmsyltsfegvanlkvlsayhndlnndglltyfigisetdagay 1033
Oy	335 -----RIELSGTITTL-----ELNSPAG--YSIAEPIITKVEAGKYTTI-IDGQIE 379
Db	1034 ywrsyvhakfndqkaanaawsewhkldcplnpykstilprvlyk--srlyllwleqkelt 1090
Oy	380 NPNKEIPEPYSVEAENDFE-----EFVSULTTON-----YAKF 411
Db	1091 kqtgnskdgytctetryelkiahrlrydgwtvtrtftfvnkkiselkleknrapgllycaq 1150
Oy	412 YYAKN-----KNGSSQVVYCFENADLKSPDSEDEGCKTWP----- 446
Db	1151 ygsgeellvmfyngqcdltlsyknaasmqjlylf-admas-----kmtpeqsnhyidn 1201
Oy	447 -----DEFTGEKVTYTHIAGRDLEKTYVVKPRDNP 475
Db	1202 syqgfdlnvtrvrnrgywgdydlismvyngddgywvgydlismvngdplptlnykaaasql 1261
Oy	476 DTFELHKKVIEEKY-----REKQAIIEYSGLEETQLRATQALAIYFTDSAELEDKDKLD 531
Db	1262 klylsprklrllnngyegqkngcniimkkygkldgflvytsgvnpnnsnklmfypvyq 1321
Oy	532 YHFGEDMNDSTLAVALILEVEYAQDSNPQLDLDFFIPNNK-----YQSLIGTQW----- 582
Db	1322 ysg-----ltsglngrll--fnrdttyp--skvseawlpagkslnqnaaldddyatdsal 1373
Oy	583 -HPEDLVDIRMEDKKEVI-----PVTHNLTL-----RKYTVTGACGRTKDFHE----- 626
Db	1374 nkpddlkqyifmtdskkgcatdvsgrvelnataaspkavqlivkaggkeqftadkdvslqpr 1433
Oy	627 -----TELKNNKQELLSQYVTKDTKTNLEF--KDGK-----ATINLKHG 662
Db	1434 spsfedemyqfnaleidsqgnlfnmnsasidvltfafeadgrklgyesfsipvlltksctd 1493
Oy	663 ESLTLQGLPEGYSYLVKKEPDSEGYVWYVNS-----QEVANATYSKSGITDETLAFENKKE 718
Db	1494 nallthhngengqgm-----qwsysrtitrltclarqlvarat--tgidtlismetqnldge 1546
Oy	719 PVVPTGVDDOKINGYLALIVIAGISLGIWG 747
Db	1547 p-----qlgkgyafatfviprynlstbq 1568
RESULT . 7	
XX	W56573 standard; Protein; 1849 AA.
XX	W56573;
XX	W56573;
XX	07-AUG-1998 (first entry)
XX	Toxin TcdAII, encoded by the tcdA gene from genomic region tcd.

DR WPI: 1999-357844/30.
DR N-PSDB: X77593.

XX Staphylococcus aureus fibrinogen-binding proteins for treating
PI septicemia, osteomyelitis, mastitis or endocarditis
XX

Claim 8; Fig 8; 143pp; English.

CC This invention describes novel Staphylococcus aureus fibrinogen-binding
CC proteins that bind both the alpha and beta fibrinogen chains. The
CC proteins (and their encoding nucleic acids are ClfB, SdrC, SdrD and
CC SdrE). Staphylococcus aureus is thought to utilize fibrinogen to adhere
CC to medical devices, binding proteins that bind both the alpha and beta
CC fibrinogen chains (ClfB, SdrC, SdrD and SdrE) can therefore be used as
CC competitive inhibitors to block this binding. Antibodies against ClfB,
CC SdrC, SdrD and SdrE inhibit ClfB, SdrC, SdrD and SdrE mediated binding.
CC The proteins of the invention can be used in a pharmaceutical composition
CC for the treatment of Staphylococcus aureus infection e.g. septicemia,
CC osteomyelitis, mastitis or endocarditis or to inhibit the binding of
CC S. aureus to the extracellular matrix. The proteins or their fragments
CC may be used to coat a medical device to reduce the S. aureus infection of
CC an indwelling medical device, especially where the medical device is
CC selected from the group consisting of vascular grafts, vascular stents,
CC intravenous catheters, artificial heart valves, and cardiac assist
CC devices. ClfB, SdrC, SdrD, SdrE, or an active fragment, subdomain or
CC encoding gene may be used as a vaccine. The DS (aspartate serine) repeat
CC region or a gene encoding it may be used as an identifying probe for the
CC identification of genes and encoding proteins from Staphylococcus aureus
CC (other than ClfB), S. hemolyticus, S. lugdunensis, and S. schleierferti.
CC The proteins of the invention have antibacterial activity.

CC Sequence 1315 AA:

SQ

Query Match 3.8%; Score 149; DB 20; Length 1315;

Best Local Similarity 20.2%; Pred. No. 0.041; Mismatches 203; Conservative 93; Indels 372; Gaps 45;

DB 8 NKLNTLNTQTVLSKNS--KRETVTLGVFLMIFALVTSMWGAQTVGLVESSNP----- 59
DB 208 nsnmennadilipkstapkrlntr-----mrlaavgssteaknvdlltsntltlvda 262
QY 60 ---MAINP--DSSSEYRWYGESYRGHPYKQFVHDLRLVLEGSRSYQVYCFNLKKA 114
DB 263 dknklyvpqdylsksqgtvdckvsgdyf-----tlkysdctvygylnpedl 311
QY 115 FPLGS---DSSVKWKYKHHDC---ISTKPEDYAMSPRITGDELNOKLRAVWYNGH--- 163
DB 312 knigdlkdpngeclatakhdcannllyctfdyv-----drfnsvgmglnglsymda 364
QY 164 ---PONANGIMGLEPPLNLRVTOEAWYYSQNAPISNPDESFKRSESNL----- 211
DB 365 dltprskndvefnvltgntktcttanlgydyvvnknksigsfctvshvgnkenpyy 424
QY 212 ---VSTQSLMRQALK---QLIDPMLATKMPKQVDDDLSTFESEBDKDGKYNKGY 262
DB 425 kqtllyvnpensalnaklkvgayhsypniginkdvcd---lklyq-vpkygylnkgy 480
QY 263 QNLISGLVPTKPPPTGDPMPNPOTTSVLIRKAIADYSK----- 305
DB 481 d-----vntkelt-----dvlnqylkltlydnnsavldfgnadsayvnmv 522
QY 306 -----LLEGATQLQGD-----NW 319
DB 523 tkfgytnsesplvgnatlsctgnksvstgnaalgftnngsgaggevykignyvwedtnk 582
QY 320 NSFQ-----ARVESN---DIGERIELSDGTYLTEL-----NSPAGYS 355
DB 583 ngvgeigekygvnvtvtdnntktvgaeavkcdgsgylplnpdgyvvelsnlpkyge 642
QY 356 IAE----- 358
DB 643 vprskgnmeeldsnglssvltvngkdnlsadglykpkynlgdywedtnkngldqge 702

QY 359 -----PIFFKVEAGKVY---TIIDGK-----QIENPNKEI-----VEPYSEAYNDF 397
DB 703 kqisgvtvllkengnvlktvtldadgkykftldngnykvefttpegytptvtsgsdl 762
QY 398 EEPs-VLTQNT-----AKFYAKNNKSSOVYCFNADLKSPDSED---GGKT 443
DB 763 ekdsnglttgyingadnmltdsgfkytckynlgnvywedtnkdqg--dstekglsqvt 820
QY 444 MPDFTTGCVKTKTHLAGRD-LFKYVKKPRDTPDPFLKIKKIVIEKGYREKQALREY--- 499
DB 821 vlknengevltctkdqgkyqft-----glengtykvefetr 859
QY 500 SGLTETQALMAATQALAI-VYFTDSABELDKD-----LKDY-----HGRG 536
DB 860 sgtytpqvgsgcdgdsngtstgyikdkndtdsdfkykptylsgdywedtnknqy 919
QY 537 DMNDSTLAVA-----KILVEYAQDSNP-QLTDLDFIPNNKQSLIGTGMHPED 586
DB 920 dkdekqisgvtvlltdendkvltvtldengkyqftdl-----ngtyk----- 963
QY 587 LVDIIRMEDEKKEVIP--VTHNLTIRK-----TVTGJ---AGDRTKDPHEIELKNNKQEL 636
DB 964 ---vefetrpsgytprsvtsngdtekdsgnlttgyikadnmltdsgf---yktrpkysl 1016
QY 637 -----LSQFTKTDKTNLFEKDGKATIMLKHGESLTLQGLPEGYSYLKERTDSGKYVK 689
DB 1017 gdyvvydsnkdkgkdstekgldvkvlltnkegevlgttktdengkyctcdnldsgkykvl 1076
QY 690 VNSQEVANATVSKTGTSTDETLAFENKKEPVPTGYDQKI-NGY 732
DB 1077 f--ekpqltqgtntlteddkdaddgdevdvltdhddfldngy 1118

RESULT 11

Y00238 standard; Protein: 2032 AA.

AC Y00238;
DT 20-APR-1999 (first entry)
XX
DE Enterococcus faecalis protein EF123.
XX
KW Enterococcus faecalis; infection; vaccine; immune response; diagnosis;
KW detection; attenuation; antigenic.
XX
OS Enterococcus faecalis.
XX
PN WO9850554-A2.
XX
PD 12-NOV-1998.
XX
PF 04-MAY-1998; 98WO-US08959.
XX
PR 14-NOV-1997; 97US-0066009.
PR 06-MAY-1997; 97US-0044031.
PR 16-MAY-1997; 97US-0046655.
XX
PA (HUMA-) HUMAN GENOME SCI INC.
XX
PI Bailey C, Choi GH, Hromockyj A, Kunsch CA;
XX
DR WPI: 1999-070095/06.
DR N-PSDB: X20228.
XX
XX
XX New isolated Enterococcus faecalis polynucleotides - used to develop
XX products for the detection of Enterococcus and for use in vaccines
XX for prevention or attenuation of Enterococcus infection
XX
PS Claim 9; Page 224-225; 301pp; English.
XX
XX The present sequence represents a protein isolated from

CC Enterococcus faecalis. The present invention describes genes, proteins
 CC and antigenic polypeptides isolated from *E. faecalis*. The proteins can
 CC be used in vaccines for preventing or attenuating an infection caused
 CC by a member of the *Enterococcus* genus in an animal. They can also be
 CC used for detecting *Enterococcus* antibodies in a sample. The nucleotide
 CC sequences can be used for detecting *Enterococcus* nucleic acids.
 CC Products from the present invention can also be used for screening
 CC compounds to identify agonists and antagonists of *E. faecalis* protein
 CC activity.

XX Sequence 2032 AA;

Query Match 3.8%; Score 149; DB 20; Length 2032;
 Best Local Similarity 19.0%; Pred. No. 0.083;
 Matches 178; Conservative 117; Mismatches 330; Indels 310; Gaps 44;

OY 19 LSKNSKRFVTIVGVLMFALVTSWY-----GAKTVFG-----LVSSRPNAI 62
 DB 1098 lktamdettllgahfqlwdgaktqylregtvdagvltfgglpggqyllvetkap--- 1154
 OY 63 NPDSSSEYRWYGYESYRGHPYKQFRVAHDLRVNLEGSRSYGVYCFNLKAPPLGSDSS 122
 DB 1155 -----egytsdelakgrvlttdeetsaagap-tlikndvkvflekmdex 1200
 OY 123 VKRW----YKKHGGISRK---EDYAMSPRITGDELNOKRLAIVYNGHPONANGIME--G 173
 DB 1201 gkhlvnafrfklehavltpfhweevlaptl-----nangqlvnds 1242
 OY 174 LEP-LNAIRVTOEAVWYYSNAP-----ISNPDSFRRESSE 210
 DB 1243 lkpjlygfteieaptqylltctpkrlvtntsqdlrdvhkmlnygssellkkdaqn 1302
 OY 211 LVSTQSLSM--RQALKQ--LIDPNLATKMPKQVDDFOLSIFFESDKDKYKNGYQL 265
 DB 1303 plagaetsvidtggavrenlvsdangkvvtclapqkyf-----vetkap----- 1349
 OY 266 LSGGLVPTKPPPTGDPMPNPOT-----TSVLIRKVALGYSKLEGATLQ 313
 DB 1350 -agyllntepafltaasdgkpatvlatanfnygglaklikkdvg--hllsgatfk 1405
 OY 314 LVTDNNNSFCARFSSNDIGERI--ELSDGTVLTLELNSAGYSI-AEPTFPV---EAG 367
 DB 1406 vldakgetlqgl-tlcngeivaeahlapgkyrfvetkapqyllntprpfleaknaq 1464
 OY 368 K-----VYTIIDGKOIENPKKEIPEYSVAYNDFFESVLTTONYAK-- 410
 DB 1465 kpravvaadnfvsykgafqvktnsdaqplagav---fely-dhmkqslglatagkdq 1519
 OY 411 -----FYAANK-----NGSSQVYVC-----FNADLKSPDSDGKMTPTDF 448
 DB 1520 kllfrlapqcluykkelkapklpdsadylllypelvkvelfgdgfdgdel-----f 1569
 OY 449 TTGEVKTTHAGBDLFKYTKPRDTPDFLKHKKVIEKGYR-----EKGOAT--- 497
 DB 1570 q1g--afanfkgravfkikianaanp)pgtlfklyr--lengekiferevtaekdgsame 1625
 OY 498 -----EVSGLTETOLRAATOLAIYF-----TDSAEIDKDKLKDYNG--FG---DMND 540
 DB 1626 dlagsyeldeladatqgylvnkqpylfvkvknsndkqpldelefvygaevmrgkvneq 1685
 OY 541 STLAIVAKILVEYQDSNPPOLTDLDFEIPNNKTYOS----- 576
 DB 1686 qtlagavfa1ayndeqnpgpsp1tflnragvsel1tldktgelyakg1neghyvlvet 1745
 OY 577 -----LIGQWPEEDLVDIRMEDKKEVPVTHNLTFRKTVGGLAGDRKDNHFEELK 630
 DB 1746 kaptqylidctllp---fdvtaqlgkeqpladgllnygqta-----q1tke 1789
 OY 631 NKKOELLSTV--KTDKTNLEFRDGRAT1-NLKHGESLTQGLPREGY-----SYLV 678
 DB 1790 netgealagavfvkldetg-qtvdgqtnlmsdkgkv1akn1lapgyrkyrfvetqapsy1l 1848

OY 679 KETDSEGYK-----VKVNSOEAVNA----- 698
 DB 1849 netpsasf1akdnqgkpatvwlkapf1nygsaaklvkldqkmalagaefkvtldaetq 1908
 OY 699 TVSKTGITSDETLAFENKKEPVVPTGVDOKI-NGY 732
 DB 1909 tvarslrsdnglvqynh1qpgkytfvetkapdgy 1943

RESULT 12

ID Y00240
 XX Y00240 standard; Protein; 2032 AA.
 AC Y00240;
 XX
 DT 20-APR-1999 (first entry)
 XX
 DE Enterococcus faecalis protein EF124.
 XX
 KW Enterococcus faecalis; infection; vaccine; immune response; diagnosis;
 KM detection; attenuation; antigenic.
 OS Enterococcus faecalis.
 XX
 PN W09850554-A2.
 XX
 PD 12-NOV-1998.
 XX
 PF 04-MAY-1998; 98W0-US08959.
 XX
 PR 14-NOV-1997; 97US-0066009.
 PR 06-MAY-1997; 97US-0044031.
 PR 16-MAY-1997; 97US-0046555.
 XX
 PA (HUMA-) HUMAN GENOME SCI INC.
 XX
 PI Bailey C, Choi GH, Hromocky J A, Kunsch CA;
 XX
 DR WPI; 1999-070095/06.
 DR N-PSDB; X20230.
 XX

PT New isolated *Enterococcus faecalis* polynucleotides - used to develop
 PT products for the detection of *Enterococcus* and for use in vaccines
 PT for prevention or attenuation of *Enterococcus* infection
 XX
 PS Claim 9; Page 228-229; 301pp; English.
 XX

CC The present sequence represents a protein isolated from
 CC *Enterococcus faecalis*. The present invention describes genes, proteins
 CC and antigenic polypeptides isolated from *E. faecalis*. The proteins can
 CC be used in vaccines for preventing or attenuating an infection caused
 CC by a member of the *Enterococcus* genus in an animal. They can also be
 CC used for detecting *Enterococcus* antibodies in a sample. The nucleotide
 CC sequences can be used for detecting *Enterococcus* nucleic acids.
 CC Products from the present invention can also be used for screening
 CC compounds to identify agonists and antagonists of *E. faecalis* protein
 CC activity.

XX Sequence 2032 AA;

Query Match 3.8%; Score 149; DB 20; Length 2032;
 Best Local Similarity 19.0%; Pred. No. 0.083;
 Matches 178; Conservative 117; Mismatches 330; Indels 310; Gaps 44;

OY 19 LSKNSKRFVTIVGVLMFALVTSWY-----GAKTVFG-----LVSSRPNAI 62
 DB 1098 lktamdettllgahfqlwdgaktqylregtvdagvltfgglpggqyllvetkap--- 1154
 OY 63 NPDSSSEYRWYGYESYRGHPYKQFRVAHDLRVNLEGSRSYGVYCFNLKAPPLGSDSS 122
 DB 1155 -----egytsdelakgrvlttdeetsaagap-tlikndvkvflekmdex 1200

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QY 123 VKKW---YKKGDISTKF---EDYAMSPRITGDELNOKLRAVMYNGHPONANGIME--G 173
DB 1201 gkklvnarfklhnavtftthweevlplardt-----nanqglevds 1242
QY 174 LEP-LNAIRVTOEAVWYISDNAP-----ISNPDEFKRESEN 210
DB 1243 lkpjlygfteiaeplyltdtprkfivtqntsgqirdvhvkmlyngsaaelikkdaqn 1302
QY 211 LVSTQSLSLM---ROALKO--LIDPMLATKMPKQVDDPOLSFEESEDDGDKRNKYQNL 265
DB 1303 plagaefsvldtggavrehlvsdangkvtdlapykyf-----vetkap----- 1349
QY 266 LSGGLVTRKPTPGDPMPNPOT-----TSVLIRKVAIGDYSKLLLEGATLQ 313
DB 1350 -agyllntepsaftlaasdrqkpatvlatanfnygtaklikkdng---hllsgatfk 1405
QY 314 LTGDVNVNSFOARVSSNDIGERI--ELSDGYTLTELNSPAGYST-ABPTTRKV---EAG 367
DB 1406 vldakgetlqtl-ttnngseivaehlapgkyrfvetkaptyllnttprfelaeknag 1464
QY 368 K-----VYTIIDGKQIENPNKEIPEYSVEAVNDEFEESVLTTONAK-- 410
DB 1465 kpaavvasdnfvsygaqigivktusadqplagav---fely-dhmkqslgltatsgkq 1519
QY 411 -----FYAAKNK-----NGSSQVVC-----FNADLKSPDSEDDGKTMTPDF 448
DB 1520 klffrdlapgtytykkelkpklpdgadyillypelvkvrelrgdkgdpel-----f 1569
QY 449 TTGEVAKYTIAGDLEFKYTVKPRDPTDFLKHIVITEKTR-----EKGQAI--- 497
DB 1570 qly--afanfkggravfkkladanaplpgtlflklyr--lengekliferelaekdgslame 1625
QY 498 -----EVSGLTEPQLRATOLAIYF-----TDSAEILDKDKLKYHG--FG---DMND 540
DB 1626 dlagagsyeideidatqylnvknqyifvwwkksndkqpldelefvygaewmrgkvneq 1685
QY 541 STLVAARIIVERAQSNDSPQTLDTLDFEIPNNKRYQS----- 576
DB 1686 qtlagavfalyndeqngqspitflnragelvselttdkgeilyakqldneghyvlvet 1745
QY 577 -----LIGTOMHPEDLVDIRMEDKKEVIPTVHNLTLRKTVYGLAGDRKDRHFEIELK 630
DB 1746 kaptqylldtclhr---fvtvtaqlgkcpialqldllyngqta-----qltke 1789
QY 631 NNKQELISQTV--KTQKTNLEFQDKATI--NLKHGESLTLQGLPEGY-----SYLV 678
DB 1790 netgeelagavfkviidecg-qtvdgqtnlmsdkqgkviahknaplpgtyrfvetqaptsyll 1848
QY 679 KETDSEGYK-----VKVNSQEVANA----- 698
DB 1849 netpsasfllakdngkqkpatvllkapflnyggaaklvikidqgnalagaefkvtldaetq 1908
QY 699 TVSKTIGTSDETLAEPNNKEPVVPTGVDOKT-NGY 732
DB 1909 tvarslrsdngslvynhlpgkykvtvetkapgy 1943

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RESULT 13

```

ID Y00242 standard; Protein; 2032 AA.
AC Y00242:
XX 20-APR-1999 (first entry)
DE Enterococcus faecalis protein EF125.
XX
XX Enterococcus faecalis: infection; vaccine; immune response; diagnosis;
KW detection; attenuation; antigenic.
OS Enterococcus faecalis.
XX
XX WO980554-A2.
PN

```

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XX 12-NOV-1998.
PD
XX 04-MAY-1998; 98MO-US08959.
XX
XX 14-NOV-1997; 97US-0066009.
PR 06-MAY-1997; 97US-0044031.
PR 16-MAY-1997; 97US-0046655.
XX
PA (HUMA-) HUMAN GENOME SCI INC.
XX
PI Bailey C, Choi GH, Hromockyj A, Kunsch CA;
XX WPI; 1999-070095/06.
DR N-PSDB; X20232.
XX
XX New isolated Enterococcus faecalis polynucleotides - used to develop
PT products for the detection of Enterococcus and for use in vaccines
XX for prevention or attenuation of Enterococcus infection
XX
PS Claim 9; Page 232; 301pp; English.
XX
XX The present sequence represents a protein isolated from
CC Enterococcus faecalis. The present invention describes genes, proteins
CC and antigenic polypeptides isolated from E. faecalis. The proteins can
CC be used in vaccines for preventing or attenuating an infection caused
CC by a member of the Enterococcus genus in an animal. They can also be
CC used for detecting Enterococcus antibodies in a sample. The nucleotide
CC sequences can be used for detecting Enterococcus nucleic acids.
CC Products from the present invention can also be used for screening
CC compounds to identify agonists and antagonists of E. faecalis protein
CC activity.
XX
SQ Sequence 2032 AA;

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Query Match 3.8%; Score 149; DB 20; Length 2032;
 Best Local Similarity 19.0%; Pred. No. 0.083;
 Matches 178; Conservative 117; Mismatches 330; Indels 310; Gaps 44;

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QY 19 LSKNSKRFVTLVGVLMFALVTSNV-----GAKTVG-----LVESSPNAI 62
DB 1098 lktandettllagahgfdwdqaktvlgvtdacvltfpgqylyvetkap--- 1154
QY 63 NPDSSEYRMWYGESYVRGRHPYKQFVAHDLRVNLGSSRSYOVCFNKKAFPLGSDSS 122
DB 1155 -----eytvsdelakgrvltideetsesgqp-tllndvnxflkmdck 1200
QY 123 VKKW---YKKGDISTKF---EDYAMSPRITGDELNOKLRAVMYNGHPONANGIME--G 173
DB 1201 gkklvnarfklhnavtftthweevlplardt-----nanqglevds 1242
QY 174 LEP-LNAIRVTOEAVWYISDNAP-----ISNPDEFKRESEN 210
DB 1243 lkpjlygfteiaeplyltdtprkfivtqntsgqirdvhvkmlyngsaaelikkdaqn 1302
QY 211 LVSTQSLSLM---ROALKO--LIDPMLATKMPKQVDDPOLSFEESEDDGDKRNKYQNL 265
DB 1303 plagaefsvldtggavrehlvsdangkvtdlapykyf-----vetkap----- 1349
QY 266 LSGGLVTRKPTPGDPMPNPOT-----TSVLIRKVAIGDYSKLLLEGATLQ 313
DB 1350 -agyllntepsaftlaasdrqkpatvlatanfnygtaklikkdng---hllsgatfk 1405
QY 314 LTGDVNVNSFOARVSSNDIGERI--ELSDGYTLTELNSPAGYST-ABPTTRKV---EAG 367
DB 1406 vldakgetlqtl-ttnngseivaehlapgkyrfvetkaptyllnttprfelaeknag 1464
QY 368 K-----VYTIIDGKQIENPNKEIPEYSVEAVNDEFEESVLTTONAK-- 410
DB 1465 kpaavvasdnfvsygaqigivktusadqplagav---fely-dhmkqslgltatsgkq 1519
QY 411 -----FYAAKNK-----NGSSQVVC-----FNADLKSPDSEDDGKTMTPDF 448

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Db 1520 kllfrldlapgttyyykkelkpklpdgadyillypelvkvvelrgdtkgqpel-----f 1569
QY 449 TTGEVKYTHIAGDLKFRYYVKKPRDPTFLKHKKVIEKGR-----EKGAQI--- 497
Db 1570 qlg--afanfkgvavfkklidanaplpqtlfklyr--lengekiferexvtaekdgsllame 1625
QY 498 -----EVSGLTERQLRKATOLAIYF-----TDSAEIDPKDLKDYHG--FG---DMND 540
Db 1626 dlqagsyeldeladatgylvnkqpiyfvvkkksndkqplidelelfvnygaevmrgkvneq 1685
QY 541 SFLAVKILVEYADSNPPOLTFDLDFEIPNNKYYQS----- 576
Db 1686 qltagavfalynadegnqpgspitflinragekvsetlctkgelyakqlneghyvlvet 1745
QY 577 -----LIGTQWHPEDLVDIRMEDKKEVILPVTHNTLRKVTYGLAGDRTKDFHEIELK 630
Db 1746 kaptgyllldtlhpr---fdvtaqlgkqplaqdlinygta-----qltke 1789
QY 631 NNKQELLSQTV--KTDKTNLEFKDGKATI-NLKHGESLTLOGLPEGY-----SYLV 678
Db 1790 netgealagavfkvlidetg-qlvdgqclnmsdkqgkvlaaklnlapgtvyrftvetqaptsyll 1848
QY 679 KETDSEGYK-----VKVNSQEVANA----- 698
Db 1849 netpsasftlakngkqkpatvllkapflinygsaaklvkldqgknaalagaefkvtadaetq 1908
QY 699 TVSKTGITSDETLAFENKPEVPVPTGVDOKI-NGY 732
Db 1909 tvarsirsdngqivgvnhlqpgkytvetekapgy 1943

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RESULT 14

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R22675 ID R22675 standard; Protein: 1185 AA.
XX AC R22675;
XX DT 04-DEC-1992 (first entry)
XX DE Collagen binding protein.
XX KM CBP; collagen binding protein; mastitis; arthritis.
XX OS Staphylococcus aureus.
XX FH Key Location/Qualifiers
FT Region 30..1185
FT /note="claim 11; page 29-30"
FT Peptide 1..29
FT /label= sig_peptide
FT Region 30..534
FT /label= A
FT /note="see CC"
FT Region 535..721
FT /label= B1
FT /note="see CC"
FT Region 722..908
FT /label= B2
FT /note="see CC"
FT Region 909..1095
FT /label= B3
FT /note="see CC"
FT Region 1096..1159
FT /label= W
FT /note="see CC"
FT Region 1160..1179
FT /label= M
FT /note="see CC"
FT Region 1180..1185
FT /note="charged C-terminal"
XX MO9207002-A.

```

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XX PD 30-APR-1992.
XX PF 22-OCT-1991; 91WO-SE00207.
XX PR 22-OCT-1990; 90SE-0003374.
XX PA (ALFA ) ALFA LAVAL AGRI INT AB.
XX PI Guss BM, Hook M, Jonsson H, Lindberg KM, Patti J, Signaes LC;
XX PI Switalaski LM;
XX DR MPI: 1992-167099/20.
XX DR N-PSB; Q24123.
XX PT Hybrid DNA molecule encoding S.aureus collagen binding protein -
XX PT protein is expressed in E.coli and used for diagnosis e.g. of
XX PT septic arthritis
XX PS Disclosure; Fig 2; 40pp; English.
XX CC The amino acid sequence (encoded by the sequence assembled from
XX CC partially homologous p16 and cCOLR6A inserts) comprises a structure
XX CC resembling a signal sequence. Following this region, a region
XX CC called A is found followed by a repetitive stretch of 187 amino
XX CC acids called B1, B2 and B3. Directly following these regions there
XX CC is a region called W which consists of a repetitive, hydrophilic
XX CC structure contg. several proline residues. This region is thought
XX CC to mediate the binding of the protein to the cell wall. The amino
XX CC acid sequence nearest to the C-terminal end consists of a long
XX CC stretch of hydrophobic residues followed by some charged amino acids
XX CC This region is called M.
XX CC The CBP can be used for immunisation pref. in combination with a
XX CC fusion protein, e.g. for vaccination of ruminants against mastitis
XX CC caused by staphylococcal infections. It can also be used to block
XX CC infection in an open skin wound, e.g. for blocking protein receptors
XX CC or by immunisation. In the latter, the host produces specific
XX CC antibodies which block the adherence of the bacterial strains to
XX CC damaged tissue. This treatment can be used for septic arthritis
XX CC and tissue damage of e.g. skin, connective tissue, and mucous
XX CC membranes. Dosage for immunisation is 0.5-5 microg CBP/kg; for
XX CC topical admin. the protein is used at a concn. of 25-250 microg/ml.
XX SQ Sequence 1185 AA:
QY 98 LEGRSY-----QVCFENLK-----KAPPLGSDSSVKK-W----- 126
Db 395 leapryftldkdkyfpfmdtdngyftlienakalektkdsagkvegtkvxply 454
QY 127 ---YKKHDGIST-----KFDYAMSPRTGDDL---NOKLRVNV----- 160
Db 455 fklxqddngntprvdkaelkkied--gltkvwslndpndkgaikaiklvvevnaaged 512
QY 161 ---NGHPQANANGIM--EGLEPLNAIRVTOEAVVYVYEDNAPISNPDSEFRSESNLVST 215
Db 513 ttegytltkenglvvntektplettisigskvddkdndgdkrpek-----vsyn 562
QY 216 QLSLMQALKQLIDPNLAKMPKQVPDDFQLSFESEDKGDK-----YNGGYNLLS 267
Db 563 llangekv--klidvsetnwkyefkd-----lpkydegkkleyvtedhvytdtdln 614
QY 268 GGLVPTKPPRPG-----DPPMPPNQPTTSLIRIKYAGDYSKLEKFTLDLQTD 317
Db 615 gtlf-lnkyltpgetsatvknwddnnnqdkrptekvelydgkat---gktalines 669
QY 318 NVNSFOARVSSNDIGERIELSDGTYTLTFLNLPAGYSI-----APRPF 362
Db 670 nmwhtwtgldekakgqykv-----ytveelkvkvgytchvdnmdngnlvtnkypet 724

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OY 363 KVEAGVYTIIDGQIENPKELVEPYEAVYNDPEFSVLTQNAKEYY-----AKNK 417
DB 725 slsgekvwdkndqgdkrpk-----vsynlladgkvkltlvtsetnwkyefkdlpkypd 779
OY 418 NGSSQVYVCFNADLKSPPEDEGKTMPTDFTYGEVKYTHIAGRD-----462
DB 780 eg-kkleyctvehvdyttdingttlnkytgetsatvtnkwdnnngdqrrpeikv 838
OY 463 -LF---KYVVKPDPDPTFLKIKVIEKGYREKGOALIEYSGLTQLRAAQ-----512
DB 839 elygdgkatgktacltnesnwtltwtgld--kakgqvkytveeltkvkgytthvdnd 896
OY 513 -----LAIFYFTSAELDKDKLDYHGFGDMNDSTLAVAKILVEYADSNPQOLDLDF 567
DB 897 mgnlitvtnkypetstaisgekwad-----dkn-----gdqkrpekvsnv 937
OY 568 IPNNKRYOSL---IGTQWPEDELVDIIRMEKKEVIVPYNHLTKRYTGLADRRKDFH 634
DB 938 langekvltlvtsetnwkye-fkdlpkkydegkkl-----eyltv---edhvkdyt 984
OY 625 FELE-----LKNKKQELISGVYKT---DKTNLE-----FKDGKAT-----INLKH 661
DB 985 tdingttlnkytgetsatvtnkwdnnngdqkrpeltkvelygdgkatgktacltnesn 1044
OY 662 GSELTQGLPE-----GYSYLVE-TDSEGYKVKVNSOEYANATVSK--TGINSDELTA 713
DB 1045 nwtltwtgldkakatgqvkytvtdeklvngytlthvdndmgnlitvtnkypkpknpkyp 1104
OY 714 ENNKEPVPTGVD 726
DB 1105 ekpdktpkpkpd 1117

RESULT 15
Y08603
ID Y08603 standard; Protein; 1112 AA.
XX
AC Y08603;
XX
DT 05-AUG-1999 (first entry)
XX
DE S. pyogenes SFEPB-12 protein.
XX
KW SFEPB-12; fibrinogen; fibrinogen; group A streptococci; infection;
KW fibrinogen and fibrinogen binding protein; bacterial adhesion; vaccine;
KW diagnosis; treatment; prevention; streptococcal infection; antigen;
KW immune system; etiologic agent; suppurative infection; pharyngitis;
KW impetigo; necrotizing fasciitis; systemic disease; scarlet fever;
KW toxic-shock syndrome; sequelae; rheumatic fever; glomerulonephritis.
XX
OS Streptococcus pyogenes.
XX
PN US5910441-A.
XX
PD 08-JUN-1999.
XX
PF 16-SEP-1996; 96US-0714402.
XX
PR 16-SEP-1996; 96US-0714402.
XX
PA (UYRQ ) UNIV ROCKEFELLER.
XX
PI Fischetti VA, Rocha C;
XX
DR WPI; 1999-356822/30.
XX
DR N-PSDB; X77451.
XX
PT Isolated DNA that encodes group A Streptococci fibrinogen and
PT fibrinogen binding proteins, useful for the prevention, diagnosis
PT and treatment of Streptococcal infections
XX
PS Claim 1; Fig 4; 17pp; English.

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XX This invention describes the isolation of a novel group A Streptococci
CC fibrinogen and fibrinogen binding protein (SFEPB-12) and its encoding
CC nucleic acid which is involved in adhesion of the bacteria to the host
CC cell, and may initiate the infection process). The products of the
CC invention are useful in the preparation of compositions and tests for
CC the diagnosis, treatment and prevention of streptococcal infection.
CC SFEPB-12 nucleic acid may be used as a hybridization probe to isolate
CC corresponding genes from other species or in biological samples by, for
CC example, Northern/southern blotting. Additionally, the nucleic acid may
CC also be transfected into host cells and used to recombinantly produce
CC SFEPB-12 proteins in fermentation cultures. The SFEPB-12 protein may be
CC used as an antigen in the preparation of vaccines to stimulate a hosts
CC immune system against Streptococcal infection. Group A Streptococci (e.g.
CC Streptococcus pyogenes) are the etiologic agents for a range of
CC suppurative infections (e.g. pharyngitis, impetigo and necrotizing
CC fasciitis), systemic diseases (e.g. scarlet fever, toxic-shock syndrome)
CC and may lead to serious sequelae (e.g. rheumatic fever and
CC glomerulonephritis).
XX
SQ Sequence 1112 AA;

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Query Match 3.7%; Score 145; DB 20; Length 1112;
Best Local Similarity 19.8%; Pred. No. 0.063;
Matches 190; Conservative 121; Mismatches 327; Indels 324; Gaps 51;

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OY 21 KNSKRTYVLY--GVFLMT-----FALVTSNMGAKTYFGLVESTPRAINPDSSSEKRW--- 72
DB 112 kstlwtvtyengytkllyvnpngelistsagskdv-----ssslqlempkmsvskyyk 166
OY 73 ---YGESYVRGHPYR---KQ-----FRVADHLRVNLEGSRSYGVYCF 109
DB 167 tewsgaadtyrlnhaayfmsfclkqdksetlnpdtvflqdrllnpxk-----217
DB 110 NLKRAP-----LGSDDSVKWKYKNDGISTKEDYA-----141
DB 218 -lsqdlprklllydeansprlaigykhaenhqlylftdyagldkvqisaelslflenkev1 276
OY 142 -----MSPRITGDELNCK--LRAVMYNGHPONANGIMEGL-----EPNAIVTQE 185
DB 277 entslnfksltlgggltykgtvnlvngnestesyltnglsnvgysiesynt--etge 334
OY 186 AWVYSDNAPISN-PDESEK-----RESESNIVTSQSLMRQALKOLIDPNLTKMP 237
DB 335 fvytyvynprntihpyatmlmgfgrarntsldendantsselselqyvepegek1p 394
OY 238 KOVPDD-----FOLSTFESEDKDK--YNGK-----262
DB 395 ssygvvtkltlrtldtaglgnqfmgtkrgldfnglnqkalfllkvgtktdqsgkplv 454
OY 263 -QNLTS-----GG-----LVPTKRPPTGGDDPMPNPNQOTSVLIRKYA 299
DB 455 qsnlasfrgaseyaftvpgnvyfnealalspsksgsgsksef--tkpsltvaanikrya 512
OY 300 IGDYSKL-----LEGATQLTGDNVNSFOARFSSNDIGE--RIELSDGYTLTFLNSP 351
DB 513 qlrfkkmstdnvp1paeafelrissngns-qkleassntlgvfnkllstgtydlyetkpa 571
OY 352 AGYS-----IAEPITF-----KYBAGKVYTIIDGKO-IENPKELVE 387
DB 572 kyygvteklatvtvdtkpaemvltwsgpsvskveannevltivhketlitsgkliwe 631
OY 388 PYSEVAVNDFEESVLTQNYAKFYAKNNKNGSSQVYVCFNADLKSPPEDEGKTMPTD 447
DB 632 -----ndrpd-----qrpakiyqql1gnqg-----kmpnq1ge-----vtxd 663
OY 448 FTTGEVYKTHIAGRDLEFKYVVKPDPDPTFLKIKVIEKGYREKGOALIEYSGLTQL 507
DB 664 ---ndwsy-hf--kdlpkkydaknge-----ykyvsveevnvpqykvsvyngndifnt 708
OY 508 RAATQALAIYFTDSAEIDDKLDKDYHGFGDMNDSTLAVAKILVEYADSN--NPOLDLTD 565

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Db 709 r-eteifveqnfnefnaeiqsgsklidedtltsfkgkikwndtaenrpqalqv 767
OY 566 FE-----IPNNNKYOSLIGTQWHE-----DLV-----D 589
Db 768 lyadvavegqtkfiagsgnewsefknlkkyngtgnllysvkevlpvgdvty sand 827
OY 590 IIRMEDKKEVI-----PYTHNLTLRKTYTGLAGDRTKDFHEIE---LKNNKQELLS 638
Db 828 ll--nlkrevltgqgpkleleelpllesgasg--gttivedsrpvdclsglsseqgsgd 883
OY 639 QTVKTDK-TNLEFK---DGK---ATINLKHGSELTLOG-----LPEGKSYL 677
Db 884 mtleedsaathikfekrdidgkelagatmelrdsqgklistcwisdgqvkdflympgkytf- 942
OY 678 VKETDSEGYV-----KNSQEVANATVSKTGITSDETLAFENNKEPVPTG---VDQ 727
Db 943 vetaapdgyelataitftvneq--gytvngkaekgdlhmwdaykpkkysgqvdlde 1000
OY 728 KI 729
Db 1001 KI 1002

Search completed: June 7, 2001, 00:17:04
Job time: 2962 sec

